This harvest may be supplemented with a flail-vac harvester that harvests by brushing mature seed into a collecting bin.

The seed will be transported to the Alston Mitigation Site. Most material will be broadcast on the restoration site within one day of harvest. Prior to seeding, hand-collected seed will be distributed into the mix for wetter sites.

Following the direct seeding, there will be a period of progress evaluation and maintenance. The evaluation will include monitoring of exotics followed by maintenance to control exotic and nuisance species.

Many non-native and nuisance species that germinate on upland restoration sites are weedy annuals that become less prolific after the second and third years, and although the site may look messy the first couple of years, if there is good native perennial competition, weedy annuals generally decrease to acceptable standards without intervention.

One species that may need active control is tropical soda-apple (*Solanum viarum)* which, if allowed to mature can produce many thousands of seed from a single plant. Tropical soda-apple is most easily controlled by hand removal or spot herbiciding the plants when plants are very young or during the spring of the year and continuing to remove them whenever they are spotted.

Bermuda grass and torpedo grass are exceptionally difficult to eradicate, even with very intensive site preparation. These problem species require several years of very active management after site seeding. Spot spraying these species on an ongoing basis as they continue to re-emerge is the best control available.

Dog fennel, which is a native perennial pioneer species, sometimes emerges in large numbers. Though most other species can germinate with dog fennel present, its rapid growth and large size may cause it to out-compete other more desirable species. After 3 or 4 years, dog fennel begins to die off or be reduced in size. Controlled burning also helps to reduce and kill the plants when they are more mature. If dog fennel needs to be controlled, control can be accomplished by wicking the tops of the dog fennel with herbicide when it is taller than the other native vegetation.

If bahia grass should germinate from seed, or otherwise need further control, the areas where they occur may be over-sprayed with imazapic at a rate that will not be detrimental to the co-existing native species. This can be done in the late spring or early summer following seeding.

When the site is mature enough to sustain a controlled burn (2010).

The goal is to keep exotic cover to less than 5 per cent.

Supplemental Planting

Near the end of the summer, after the 2010 controlled burn, tree, shrub, vine, and other groundcover species will be planted in the seeded areas. All containerized plant species will be grown from seed sources within central Florida.

Since most upland plants are more likely to readily establish in late July and August when hot dry spells are least likely to occur and the plants are actively growing, the plants will be planted at that time. This increases chances of root growth out from the container ball and therefore, establishment and survival through the droughty months of spring. The actual time of planting will be decided by the QEP on the basis of the weather patterns and projected weather patterns at that time.

Planted species will be watered on an as-needed basis through the first dry season (usually winter – spring) until summer rains begin the following year. Careful monitoring of the site will determine when this is necessary. Watering on an 'only as needed' basis increases the rate of establishment and survival. Plants placed on well-drained soils are more likely to need extra watering, and those placed in the wetter areas may not need more than the initial watering.

Trees will be planted at 50 trees or fewer per acre. Shrubs will be planted at 300 per acre.

4.1.h Planned Soils

The intent of the mitigation is not to alter the existing soils except as necessary to restore past alterations, remove sod, or construct the low water control berms. With restoration of more natural hydrology, areas mapped as wetlands on construction sheet 43A should develop more hydric soil profiles and there should be a decrease in past evidence of alteration. The USDA mapped soil types should remain.

Erosion and soil compaction should not be major issues since little disturbance to the soil is proposed. To a very large extent, erosion will be prevented by careful timing. The berms are very low and will be sodded as described above immediately after construction using native sod species. Turbidity controls will be used as needed and required where construction occurs in existing wetlands that are hydrated. Tops of berms will be hardened as described in the enclosed construction plans.

4.1.i Planned Habitat Features

No specific habitat features have been planned. Where there is currently an absence of topographic variation or snags, natural materials, such as old stumps may be selectively placed into restoration areas to provide habitat diversity.

4.1.j Planned Buffer

The restoration and enhancement areas are surrounded by natural lands owned by the SWFWMD or Hillsborough County to the north south and east. The lands to the west are natural in character on the north half of the site. The land to the west of the existing pasture area is also existing pasture. These lands will likely be restored and placed under conservation easements as mitigation for future projects in the Hillsborough River drainage basin.

4.2 Alston Mitigation Site, Off-site Upland Preservation and Management Plan

4.2.a. Mitigation Location

The north portion of the property consists of the area north of the improved pasture. The native uplands within the Alston Mitigation Site will be managed to benefit the wetlands, regional hydrology, regional water quality, and wetland biota.

4.2.b Timing of Mitigation

Mitigation will commence concurrent with site development. Maintenance activities will occur as needed based on recommendations of a Qualified Environmental Professional. See Section 8, Adaptive Management Plan for further detail.

4.2.c Grading Plan

The upland preservation and management areas will not be graded.

4.2.d Description of Methods

Nothing will be constructed within the upland preservation and management areas. They do however, need management. The management methods are described herein.

Controlled Burns

Native wildlife and vegetation in Florida are adapted to a repetitive fire regime, and certain habitats in Florida are wholly dependent upon periodic burns to maintain the health and viability of the vegetative communities and the resident animals, which in some cases may exist exclusively within specific habitats.

One species present on the Alston Mitigation Site, the gopher tortoise, is highly adapted to this type of natural disturbance. Because of its strict habitat requirements and sensitivity to seemingly minor changes in its environment, and because their burrows provide habitat for many other species, these animals are frequently considered to be a keystone species. If the habitat becomes too overgrown due to prolonged fire exclusion, it will not provide the specific habitat requirements needed by gopher tortoises and will be vacated.

Gopher tortoises inhabit dry uplands including flatwoods, sandhill, and scrub communities, particularly those which provide substantial grassy and herbaceous forage. Except on forest edges and ecotones, tortoises are generally not found in dense, shady hammocks or overgrown habitats due to an absence of suitable, mostly herbaceous, food sources. These seed sources are eliminated by the dense cover of canopy and shrub species. Frequent fire in the preferred upland communities maintains a relatively sparse canopy of pines and oaks and a diverse, dense layer of herbaceous ground cover (Abrahamsen and Hartnett 1990). The herbaceous ground cover is the principal food source for the gopher tortoise. When the frequency of periodic fires is reduced, hardwoods such as oaks and shrubs such as palmetto proliferate, causing a reduction in the amount of sunlight penetrating to ground level and a corresponding decrease in the density and diversity of herbaceous forage needed by the tortoise.

Many species of plants adapted to the upland communities also require high amounts of light provided by an open canopy to grow, and many also need periodic burning in order to reproduce. Similarly, it has been observed that upland communities which periodically burn have a higher diversity of herpetofauna and other vertebrate species when compared to uplands that do not burn on a relatively frequent schedule, as vertebrates associated with pyrophitic (fire dependent) communities will abandon the overgrown habitat (Mushinsky 1985, Wade and Lunsford 1989). Additionally, tortoise burrows have been documented to provide shelter for 60 vertebrate and 302 invertebrate species, many of which are protected by state and federal agencies (Jackson and Milstrey 1989).

Lastly, controlled fire and alternative mechanical treatments protect against wildfire. Most of the plant communities found on or adjacent to the Alston Mitigation Site are pyrophytic, that is, naturally dependant on fire and flammable. If allowed to become overgrown, fuel loads increase and wildfires can be extremely hot, difficult to control, and therefore, potentially catastrophic. If burned at appropriate intervals, fuel loads are kept low, both wildfires and controlled burns are light and manageable, and risk to property and people is low.

The Permittee will implement a periodic prescribed burn and mechanical treatment program designed to maintain habitat quality in the natural areas.

The amount of time between burns varies greatly among different natural vegetative communities. Historically, flatwoods typically burned on a two- to five-year (Meyers 1990, FNAI 1990) cycle. In order to maintain optimal conditions (canopy cover and shrub layers at a low density) for key wildlife species, particularly the gopher tortoise, the Permittee will implement a burn cycle that maximizes benefits to these species and which will encourage the burns be manageable and not very hot. With these goals, controlled burns may take place every three to five years in the flatwoods communities which typify the Alston Mitigation Site.

Management flexibility will allow for any lightning fires or other wild fires. A patchy burn pattern will be encouraged. Not all portions of a given management unit will burn or should be burned simultaneously (Abrahamsen and Hartnett 1990). A burn regime that results in habitat patches of varying ages helps to maintain habitat for species dependent on specific levels of cover or openness. In a patchy environment, many animals move to the patches that are in the preferred stage of development. Additionally, patchy burns ensure that reproductive success is lost in only a small portion of a population. For example, ground nesting birds (quail, turkeys) are particularly sensitive to burns that occur while they are nesting in the spring and early summer, as the burns are likely to destroy the nests and kill eggs and young. Incomplete burns provide habitat so that these species can nest again if one nest is lost or significantly disturbed.

Another important factor when planning this type of management is the timing of the burns. Natural fires in Florida's uplands are lightning-ignited and most occur during the late spring and early summer (May – June) just as the rainy season commences and lightning strikes are frequent (Snyder, Herndon and Robertson 1990). Small, patchy burns may also occur throughout the rainy season. Burns that coincide with the onset of the thunderstorm season trigger a late summer or early seed set in many native plant species. Additionally, fires set in latter portions of the rainy season are more likely to stop at the edges of hydrated wetlands, or burn wetlands with moist substrates only lightly and without harm, further protecting the integrity of the natural communities and minimizing the need for additional, land altering fire breaks. To mimic natural conditions as closely as possible, controlled burns will therefore take place during the late spring or early summer.

The most important part in conducting the above described management program is the actual implementation of the prescribed burns. In order to safely conduct a prescribed burn, numerous factors must be considered, including existing fuel loads, predicted weather conditions, soil moisture, risks to sensitive wildlife, adjacent habitat conditions, risks to neighboring lands, and potential impacts to human activities. Prior to conducting a prescribed burn will be made. Discussions pm where and when to burn will be made by an individual(s) qualified in performing prescribed burns. Finally, upon completion of the burn, a comprehensive assessment of the managed area will be performed to determine the successes or failures of the burn which should be considered when preparing for future management activities. This flexibility is a key component of the Adaptive Management discussed in Section 8.

Control of Wild Hogs

The European wild hog digs extensively in hammocks and selected wetlands areas churning the soil and digging up the ground cover over large areas. In the Alston Mitigation Site area, the feral hog is a problem species. Introduced from Europe, it digs up the ground flora of hammocks and wetlands while looking for food. A hog-damaged wetland looks plowed.

The wild hog will be excluded from the restoration area. Elsewhere, the best management is shooting or trapping. Hunting will be used as the primary hog control.

Cattle

Cattle will be excluded from the entire 249.1-acre Alston Mitigation Site. Please refer to Section 3 item j in the attached Conservation Easement (Appendix D)

4.2.e Description of Construction Methods

Other than fencing to exclude cattle, there will be no construction in the preservation area.

4.2.f Construction Schedule

The Alston Mitigation Site will be fenced to exclude cattle within 60 days of project commencement. No other construction is anticipated.

4.2.g Planned Hydrology

No alterations to existing hydrology are anticipated in the preservation area.

4.2.h Planned Vegetation

No alterations to existing vegetation are anticipated. Vegetation will be managed as discussed above.

4.2.i Planned Soils

No alterations to existing hydrology are anticipated in the preservation area.

4.2.j Planned Habitat features

No alterations to existing habitat features are anticipated.

4.2.k Planned Buffer

The 249.1-acre Alston Mitigation Site is surrounded by natural lands owned by the SWFWMD or Hillsborough County to the north south and east. The lands to the west are natural in character on the north half of the site. The land to the west of the existing pasture area is also existing pasture. These lands will likely be restored and placed under conservation easements as mitigation for future projects in the Hillsborough River drainage basin.

4.3 On-site Wetland Creation Plan

4.3.a. Mitigation Location.

Maps showing the locations of the three on-site wetland creation areas (M1, M2 and M3) are included as Appendix A, Figure 7.

4.3.b Timing of Mitigation

Construction of the on-site wetland creation areas will occur concurrently with site development. Construction activities for the mitigation area will commence within 30 days of wetland impacts.

4.3.c Grading Plan

Grading plans and planting plans are included as Appendix A, Figures 20 through 22B. Conceptually, each of the areas is located adjacent to an existing wetland and will be graded so that the hydrology will mimic that of the adjacent natural wetland. Each area has been design such that the majority of the area

is approximately 1.5 feet below the seasonal high water (SHW) elevation of the adjacent wetland. The SHW elevations were field verified and approved by an environmental scientist of the SWFWMD. The creation areas will be connected to an existing adjacent wetland by a small swale constructed slightly lower in elevation than the adjacent wetland's seasonal high water elevation. The swales allow water to overflow from the natural wetland when water levels are high helping to assure an adequate water supply to the created wetland. The elevation also allows wet season entry and exit by fish.

4.3.d Description of Construction Methods

A bulldozer or other appropriate mechanical equipment will be used to remove the existing soil down to the proposed grade. Silt fencing will be placed around the periphery of the construction zones to prevent erosion during construction. Side slopes above the seasonal high water elevation will be stabilized with sod after construction has been completed.

4.3.e Construction Schedule

Construction activities for the mitigation area will commence within 30 days of wetland impacts. A specific date cannot be determined prior to final issuance of all approvals needed to initiate construction.

4.3.f Planned Hydrology

As described in detail in Section 4.3.c, each wetland creation area will be hydrologically connected to an adjacent existing wetland by a small swale. In addition, because the wetland creation areas are excavated to an elevation that is below the ground water elevation, they will also receive groundwater inputs and can be expected to be inundated for 6 to 9 months in a year of normal rainfall. These areas will likely go dry during the dry season.

4.3.g Planned Vegetation

The wetland creation areas will be planted with a variety of native herbaceous and woody vegetation typical to shallow depressional wetland in central Florida. Planting plans for each area have been developed and are included as Appendix A, Figures 20-22b. The deeper zones (1.5 feet of inundation) will be planted primarily with pickerelweed (*Pontederia cordata*) and lance-leaved arrowhead (*Sagittaria lancifolia*). The intermediate depths (0.5 to 1.5 of inundation) will be planted with maidencane (*Panicum hemitomon*), canna lily (*Canna flaccida*) and prairie iris (*Iris hexagona*). The shallow edge areas (0.5 feet of inundation or less) will be planted with maidencane, rushes, beak-rushes, and sand cordgrass (*Spartina bakeri*). The entire area will be planted with 3-gallon pond cypress (*Taxodium ascendens*).

Herbaceous species will be planted on 3-foot centers and the trees will be planted on 10-foot centers. Plant material installed will be either containerized stock obtained from a reputable nursery or bare root material obtained from an approved donor wetland. It is anticipated that desirable native species will colonize the created wetland from the adjacent existing wetland thus increasing species diversity and wildlife habitat value.

4.3.h Planned Soils

The wetland creation areas will be scraped down to below the desired wetland depth. To the extent that weed free sources are available, natural soils from areas to be impacted will be moved to the creation areas and deposited such that the creation areas have the designed depth with an organic soil layer. If weed free sources are not available, the Permittee will strive to use other topsoil high in organic content to form the top layer of the mitigation wetlands. Hydric soil characteristics are expected to develop over time.

4.3.i Planned Habitat Features

No specific habitat features have been planned. Old stumps and snags from wetlands to be impacted may be selectively placed into creation areas to provide habitat diversity.

4.3.j Planned Buffer

All the wetland creation areas will be buffered to a large extent by the fact that they are bordered on at least one side by natural wetlands. These will provide a natural buffer on that side and will provide a seed source for propagules of wetland plant species that should result in increased diversity in the created wetlands. The adjacent wetlands also act as corridors allowing access for non-avian species.

Table 1. Alston Mitigation Planting Plan

Area Name	Area Type	Acres	Quantity	Size	Spacing	%	Scientific Name	Common Name
Wetland Restoration 1	Wet Prairie	14.8	14,326	1-quart BR equiv.	3' o.c.	20%	*Panicum hemitomon*	maidencane
			35,816	1-quart BR equiv.	3' o.c.	50%	*Pontederia cordata*	pickerelweed
			21,490	1-quart BR equiv.	3' o.c.	30%	*Sagittaria lancifolia*	arrowhead
			516	3-gallon	~35' o.c.	100%	*Taxodium distichum*	bald cypress
Wetland Enhancement 3 & Wetland Enhancement 4	Marshes	9.3	22,506	1-quart BR equiv.	3' o.c.	50%	*Pontederia cordata*	pickerelweed
			13,504	1-quart BR equiv.	3' o.c.	30%	*Sagittaria lancifolia*	arrowhead
			4,500	1-quart BR equiv.	3' o.c.	10%	*Thalia geniculata*	fire flag
			2,251	1-quart BR equiv.	3' o.c.	5%	*Iris hexagona*	prairie iris
			2,251	1-quart BR equiv.	3' o.c.	5%	*Canna flaccida*	golden canna
			552	3-gallon	25' o.c.	85%	*Taxodium distichum*	bald cypress
			98	3-gallon	25' o.c.	15%	*Fraxinus caroliniana*	pop ash
			650	3-gallon	25' o.c.	100%	*Cephalanthus occidentalis*	buttonbush
Wetland Enhancement 1	Historic Slough System	4.2	12,197	1-quart BR equiv.	3' o.c.	60%	*Pontederia cordata*	pickerelweed
			6,098	1-quart BR equiv.	3' o.c.	30%	*Sagittaria lancifolia*	arrowhead
			2,033	1-quart BR equiv.	3' o.c.	10%	*Thalia geniculata*	fire flag
			1,083	3-gallon	25' o.c.	100%	*Cephalanthus occidentalis*	buttonbush
			1,555	3-gallon	25' o.c.	85%	*Taxodium distichum*	bald cypress
			275	3-gallon	25' o.c.	15%	*Fraxinus caroliniana*	pop ash
Wetland Enhancement 5	Cypress Wetland	3.8	6,437	1-quart BR equiv.	3' o.c.	35%	*Blechnum serrulatum*	swamp fern
			1,839	1-quart BR equiv.	3' o.c.	10%	*Spartina bakeri*	sand cordgrass
			4,598	1-quart BR equiv.	3' o.c.	25%	*Saururus cernuus*	lizard's-tail
			3,311	1-quart BR equiv.	3' o.c.	18%	*Pontederia cordata*	pickerelweed
			1,655	1-quart BR equiv.	3' o.c.	9%	*Sagittaria lancifolia*	arrowhead
			276	1-quart BR equiv.	3' o.c.	2%	*Canna flaccida*	golden canna
			276	1-quart BR equiv.	3' o.c.	2%	*Iris hexagona*	prairie iris
			160	3-gallon	25' o.c.	60%	*Cephalanthus occidentalis*	buttonbush
			40	3-gallon	25' o.c.	15%	*Myrica cerifera*	wax myrtle
			26	3-gallon	25' o.c.	10%	*Itea virginica*	Virginia willow
			26	3-gallon	25' o.c.	10%	*Viburnum obovatum*	small viburnum
			13	3-gallon	25' o.c.	5%	*Lyonia lucida*	fetterbush

5. Performance Standards

a. Identify clear, precise, quantifiable parameters that can be used to evaluate the status of desired functions. These may include hydrological, vegetative, faunal and soil measures. (e.g., plant richness, percent exotic/invasive species, water inundation/saturation levels.) Describe how performance standards will be used to verify that objectives identified in 3(b) and 3 (c) have been attained.

b. Set target values or ranges for the parameters identified. Ideally, these targets should be set to mimic the trends and eventually approximate the values of a reference wetland(s).

Mitigation success criteria have been developed based on measurable, quantifiable parameters. Wetlands constructed for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the addition or removal of vegetation.

a. The mitigation area can be reasonably expected to develop into palustrine systems as determined by the USFWS Classification of Wetlands and Deepwater Habitats of the United States in accordance with the following table:

System	Class	Zone
Palustrine	Forested	Slough
Palustrine	Forested	Hydric flatwoods
Palustrine	Emergent marsh	Wet Prairie
Palustrine	Emergent marsh	Marsh
Palustrine	Forested	Cypress swamp
Upland	NA	Mesic flatwoods
Palustrine	Emergent marsh	Savanna

b. Topography, water depth and water level fluctuation in the mitigation area are characteristic of the wetland/surface water type specified in criterion "a."

c. The dominant, subdominant, and other appropriate species of desirable wetland plants shall be as follows:

Zone	Stratum	Dominant Species [1]	Subdominant Species [2]	Other Species (for diversity) [5]
Slough (long hydroperiod areas)	Canopy	Bald cypress	Swamp tupelo Pop ash	Pond cypress Sweet-bay
	Subcanopy	none [2]	none [3]	Coastal plain willow
	Shrubs	Buttonbush	none	None
	Groundcover	Pickerelweed	Arrowroot	Lemon bacopa Swamp fern Fragrant waterlily Alligator flag Many others

Zone	Stratum	Dominant Species [1]	Subdominant Species [2]	Other Species (for diversity) [5]
Slough (short hydroperiod areas	Canopy	Laurel oak	none [4]	Loblolly bay Dahoon holly Sweet-gum Sweet-bay Swamp bay Slash pine Water Oak Red maple Cabbage palm
	Subcanopy	none [2]	none [3]	Swamp dogwood Hornbeam
	Shrubs	Virginia-willow	none [3]	Virginia-willow Swamp honeysuckle Highbush blueberry
	Groundcover	Chain fern	Swamp fern	Netted chain fern Lizard's tail Cinnamon fern Royal fern Many others
Hydric flatwoods	Canopy	Slash Pine	none [3]	Laurel oak Water oak Red maple Loblolly-bay Dahoon holly Sweet-gum Sweet-bay Cabbage palm Live oak
	Shrubs	none [2]	none [3]	Gallberry Virginia-willow Little blueberry Swamp honeysuckle Red chokeberry Shiny lyonia Dangleberry Dwarf huckleberry St. John's worts Dwarf live oak Saw palmetto Many others
	Groundcover	none [4]	none [4]	Iris Wiregrass Beak rushes Maidencane Sedges Many others
Wet prairie	Shrubs	none [2]	none [3]	Sandweed Buttonbush

Zone	Stratum	Dominant Species [1]	Subdominant Species [2]	Other Species (for diversity) [5]
	Groundcover	none [4]	none [4]	Lemon bacopa Lizard's tail Maidencane Swamp fern Wiregrass Beak rushes Maidencane Sedges Many others
Marsh	Shrubs	Buttonbush	none [3]	Sandweed Coastal plain willow Virginia-willow
	Groundcover	Pickerelweed	Arrowhead	Alligator flag Lemon bacopa Fragrant water-lily Maidencane Cinnamon fern Many others
Cypress	Canopy	Pond cypress	none [3]	Dahoon holly Sweet-bay Swamp tupelo Red maple
	Subcanopy	none [2]	none [3]	Popash Swamp dogwood
	Shrubs	Buttonbush	none [3]	Virginia-willow Wax myrtle
	Groundcover	Pickerelweed	Arrowhead	Lemon bacopa Alligator flag Maidencane Beak rushes Many others
Mesic flatwoods	Canopy	Long leaf pine	none [3]	Slash pine Live oak
	Subcanopy	none [2]	none [3]	
	Shrubs			Saw palmetto Shiny lyonia Running oak Dwarf live oak
	Groundcover	none [2]	none [3]	Eupatoriums Beaded Panicum Coastal grasses Wirey vass Lopsided Indian grass Many others
Savanna	Shrubs	none [2]	none [3]	Gallberry Running oak Shiny lyonia Many others

Zone	Stratum	Dominant Species [1]	Subdominant Species [2]	Other Species (for diversity) [5]
	Ground cover	none [2]	none [3]	Wiregrass Beak rushes Sedges Beaded Panicum Coastal lovegrass Many others

1. Tree species must be greater than 12 feet in height and have been planted for greater than 3 years.

2. This plant community generally does not have a dominant. Low abundance of species listed in the "other species" column are appropriate.

3. This plant community generally does not have a subdominant. Low abundance of species listed in the "other species" column are appropriate.

4. This plant community is typically does not have a dominant or subdominant. High abundance of species listed in the "other species" column is appropriate.

5. All species appropriate to the zone and which provide appropriate function to the zone will be included in the determination of success.

This criterion must be achieved within eight years of mitigation area construction. The Permittee shall complete any activities necessary to ensure the successful achievement of the mitigation requirements by the deadline specified. Any request for an extension of the deadline specified shall be accompanied with an explanation and submitted as a permit letter modification to the District for evaluation.

d. Species composition of recruiting wetland vegetation is indicative of the wetland type specified in criterion "a".

e. Density of trees and percent cover meet the conditions specified in the table below.

	System Type					
Criteria	**Slough (Palustrine, forested)**	**Hydric Flatwoods (Palustrine, forested)**	**Wet Prairie (Palustrine, emergent)**	**Marsh (Palustrine, emergent)**	**Cypress (Palustrine, forested)**	**Mesic Flatwoods (upland)**
Groundcover	N/A	≥85% cover, includes shrubs	≥85% cover, includes shrubs	≥85% cover	N/A	≥85%, includes shrubs
Shrubs	≥5% cover	≥250/ac	≤10% cover	≤30% cover	≤10% cover	≥250/ac
Canopy	≥30% cover	20 or more trees/acre	≤10% cover	≤10% cover	≥30% cover	10 or more trees/acre

f. Coverage by nuisance or exotic species does not exceed 10 percent.

g. The wetland mitigation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.

The mitigation area may be released from monitoring and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

6. Site Protection and Maintenance

a. Long-term legal protection instrument (e.g. conservation easement, deed restriction, transfer of title).

There will not be any deed restrictions, easements, right of way, or other types of restrictions or encumbrances that adversely impact the proposed mitigations sites. All of the proposed mitigation areas, and the existing wetland areas that will not be impacted, will be protected through the dedication of perpetual conservation easements. The conservation easement for the Alston Mitigation Area will be in a form consistent the requirements of the Southwest Florida Water Management District (SWFWMD), and incorporates a variety of provisions to ensure the long term success of the mitigation area. The on- and off-site mitigation areas will be the subject of various forms of restrictive covenants, deed restrictions and/or property owners' association agreements which will ensure the appropriate level of maintenance and monitoring. These various documents will also ensure against any existing or future incompatible uses within the project area.

The draft conservation easement for the Alston Mitigation Area is given in Appendix D.

b. Party(ies) responsible and their role (e.g. site owner, easement owner, maintenance implementation). If more than one party, identify primary party.

The Permittees will maintain management authority for implementation and day-to-day oversight of the Mitigation Plan until such time a Property Owners' Association (POA) is formed. At that time, responsibility will be transferred to the POA. The POA will have ongoing responsibility for common area improvements for the CCTC regional retail center, including the mitigation site, mitigation areas with funding generated by Common Area Maintenance (CAM) fees.

c. Maintenance plan and schedule (e.g. measures to control predation/grazing of mitigation plantings, temporary irrigation for plant establishment, replacement planting, structure maintenance/repair, etc.).

Please see sections 4 and 8.

d. Invasive species control plan (plant and animal).

Please see sections 4 and 8.

7) Monitoring Plan

a) Party(ies) responsible for monitoring. If more than one, identify primary party.

The Permittees understand the responsibility to monitor and maintain the upland restoration and wetland enhancement/restoration areas for compliance with permit conditions and establishment of successful conditions. The Permittees are responsible for monitoring unless and until a Property Owners Association (POA) is formed and responsibility for common area improvements for the CCTC are transferred to it. Please refer to 6.b for additional detail.

b) Data to be collected and reported, how often and for what duration (identify proposed monitoring stations, including transect locations on map).

Monitoring Data shall be collected annually or semi-annually and will include the following:

a. Color photographic prints taken from fixed reference points.
b. Estimates of percent survival of planted trees and shrubs based on thorough canvassing of each area.
c. Estimates of total percent cover of vegetation.
d. A list of recruited species with an estimate of relative abundance.
e. Total percent cover of desirable species based on visual estimates.
f. Percent cover of each nuisance and/or exotic species based on visual estimates.
g. Observations of wildlife use.
h. Visual observation of water quality and measurement of water depth.

Specific monitoring locations will be determined after mitigation area establishment and will be representative of the system being monitored.

c) Assessment tools and/or methods to be used for data collection monitoring the progress towards attainment of performance standard targets.

See above.

d) Format for reporting and monitoring data and assessing mitigation status.

Monitoring data will be reported in a tabular format. The report format will be designed to concisely summarize the site conditions and to document the extent to which the success criteria are being met.

e) Monitoring schedule

A Wetland Mitigation Completion Report shall be submitted to the Corps within 30 days of completing construction and planting of the wetland mitigation areas. The monitoring program shall be initiated with the date of the Corps field inspection being the construction completion date of the mitigation area.

The Permittee shall monitor the mitigation area until the criteria set forth in the Mitigation Success Criteria are met. Monitoring events shall occur between March 1 and November 30 of each year.

An Annual Wetland Monitoring Report shall be submitted upon the anniversary date of Corps approval to initiate monitoring. Annual reports shall provide documentation that a sufficient number of maintenance inspection/activities were conducted to maintain the mitigation area in compliance according to the Wetland Mitigation Success Criteria Condition above. The performance of maintenance inspections and maintenance activities will normally need to be conducted more frequently than the collection of other monitoring data to maintain the mitigation area in compliance with the Wetland Mitigation Success Criteria Condition above.

Termination of monitoring for the wetland mitigation area(s) shall be coordinated with the Corps by:

a. Notifying the Corps in writing when the criteria set forth in the Wetland Mitigation Success Criteria have been achieved;

b. Suspending all maintenance activities in the wetland mitigation area(s) including, but not limited to, irrigation and addition or removal of vegetation; and,

c. Submitting a monitoring report to the Corps one year following the written notification and suspension of maintenance activities

Upon receipt of the monitoring report, the Corps will evaluate the wetland mitigation site(s) to determine if the Mitigation Success Criteria have been met and maintained. The Corps will notify the Permittee in writing of the evaluation results. The Permittee shall perform corrective actions for any portions of the wetland mitigation area(s) that fail to maintain the criteria set forth in the Wetland Mitigation Success Criteria.

The mitigation area may be released from monitoring by the COE and reporting requirements and be deemed successful at any time during the monitoring period if the Permittee demonstrates that the conditions in the mitigation area have adequately replaced the wetland and surface water functions affected by the regulated activity and that the site conditions are sustainable.

8) Adaptive Management Plan

Management needs vary dramatically based on the proposed mitigation activities. Adaptive management will thus vary depending on those activities.

The Permittees shall undertake required maintenance activities within the wetland mitigation area(s) as needed at any time between mitigation area construction and termination of monitoring, with the exception of the final year. Maintenance shall include the manual removal of all nuisance and exotic species, with sufficient frequency that their combined coverage at no time exceeds the Wetland Mitigation Success Criteria.

- Alston Mitigation Site, Off-site restoration and enhancement area
- Alston Mitigation Site, Off-site upland preservation and management area
- On-site Wetland Creation area

a) Party(ies) responsible for adaptive management.

The Permittees will maintain management authority for adaptive management on the mitigation sites until such time as a CCTC Property Owners' Association (POA) is formed. At that time, responsibility will be transferred to the POA. The POA will have ongoing responsibility for common area improvements for the CCTC Regional Retail Center, including the Alston Mitigation Site and on-site mitigation areas. Funding will be generated by Common Area Maintenance (CAM) fees.

b) Identification of potential challenges (e.g., flooding, drought, invasive species, seriously degraded site, extensively developed landscape) that pose a risk to project success. Discuss how the design accommodates these challenges.

Alston Mitigation Site, Off-site restoration and enhancement area

Following initial site preparation and installation of native seed materials, most management on this site becomes adaptive. The general procedure is to have the site inspected monthly and to take necessary actions to address management needs as they come up.

The principal challenges to the restoration and enhancement (both wetland and upland) is invasive species. Drought and flooding could also be problems, but they are expected to be less problematic than nuisance species.

Nuisance species

When a site like the Alston Mitigation Site restoration and enhancement area is restored via sod removal, seeding with native vegetation, and selective planting, nuisance species invasion is a potential problem. Generally, nuisance invasion is due to species on the site that were not eliminated during site preparation or species found in the surrounding area. On this site, the species of greatest concern are 1) Bermuda grass, 2) bahia grass, 3) torpedo grass and 4) tropical

soda-apple, and 5) dog fennel. In the deeper wetland areas, cattails and primrose-willow could also be problematic.

The method of choice for controlling nuisance species is prevention. Site preparation (see section 4) focuses on eliminating the pasture grasses via repetitive herbiciding and discing. The existing sod will be stripped along with its roots and rhizomes. Any grass that comes up will be herbicided and tilled repeatedly until the site can be seeded. The latter will occur in late fall or early winter as that is when native seed can be harvested and spread.

Following seeding, the site will be inspected monthly, and any grass (or any other nuisance species) that appear will be selectively herbicided.

Dog fennel is a special challenge. It is a native pioneer species that generally appears in great abundance in the first few years after seeding. It generally disappears on its own was cover with desirable species increases. In the short term, it also acts as somewhat of a "nurse plant" and can provide shade for desirable young plants. Dog fennel is thus problematic only if is becomes so abundant that it shades out the desirable plants. It will be dealt with, as appropriate, by mowing or selective herbiciding (wicking) if it becomes overly abundant.

A monthly schedule of inspection and maintenance will enable elimination of any other nuisance species that appear before they become problematic.

After the first two years, burning may be substituted for some (or all) herbicide management.

Wild Hogs

The wild hog will be excluded from the restoration area. If hogs gain entry to the restoration/enhancement area, the hogs will be trapped, killed, and disposed of consistent with local and state regulations.

Flooding and Drought

Flooding is not anticipated to be a problem. This generally low, nearly flat site has been observed under high rainfall conditions and the vegetation that is to be planted can tolerate the anticipated maximum flood levels. The planting plan for plants that will be planted as young plants (not seeded) places plants in the wetlands according to anticipated depth and hydroperiod.

Drought is a greater challenge. Should drought occur, supplemental water (pumped from an existing pond or obtained from a local well) will be used temporarily and as needed to support the system until it is adequately established to handle drought conditions.

Alston Mitigation Site, Off-site upland preservation and management area

The natural preservation and management area is anticipated to be robust to most management challenges. The site is maintained currently by controlled burns. The natural areas will be inspected at least twice per year, and controlled burns will be scheduled as needed to keep the flatwoods in good condition. The schedule may be altered in the event of a wild fire.

Wild Hogs

The European wild hog digs extensively in hammocks and selected wetlands areas churning the soil and digging up the ground cover over large areas. In the Alston Mitigation Site area, the

feral hog is a problem species. Introduced from Europe, it digs up the ground flora of hammocks and wetlands while looking for food. A hog-damaged hammock or wetland looks plowed.

The wild hog will be excluded from the restoration area. Elsewhere, the best management is shooting or trapping. If hogs gain entry to the restoration/enhancement area, the hogs will be trapped, killed, and disposed of consistent with local and state regulations.

Wild Fire and Fire Suppression

Native wildlife and vegetation in Florida are adapted to a periodic fire, and certain habitats in Florida are wholly dependent upon periodic burns to maintain the health and viability of the vegetative communities and the resident animals, which in some cases may exist exclusively within specific habitats.

Wild fires could pose a problem to the success of the mitigation area if it results in overly hot fires or if the restoration/enhancement area burns before planted materials are sufficiently well established to recover from fire. Alternatively, fire suppression could lead to extreme fire hazard and loss of characteristic flatwoods and savanna plant communities.

Controlled fire and alternative mechanical treatments protect against wild fire and prevent the risks and natural community degradation that occur with fire suppression.

With this in mind, the Permittee will implement a periodic prescribed burn and mechanical treatment program designed to maintain habitat quality in the natural areas. The burn regime is described in detail in Section 4.

On-site Wetland Creation areas

These areas provide the greatest adaptive management challenges as the areas will be surrounded by developed areas and the general area around the CCTC is already developed and nuisance species are abundantly available to invade. Avoidance via appropriate site design and exclusion of invasive species from the site are considered to be the best controls, however active measures will be used if avoidance is not adequate to prevent nuisance species problems. The Permittee has developed an On-site Wetland Protection Plan that has been approved by Pasco County Appendix J).

Buffers (Avoidance)

Consistent with the SWFWMD regulations, buffers averaging 25 feet will be maintained around all wetland areas to provide an upland transition into the wetland areas and to protect the natural wetland systems from development impacts. A minimum 50-ft buffer will be maintained along Cypress Creek.

Buffers around wetlands serve to reduce the extent and intensity of secondary impacts. They help maintain water quality in the wetlands, minimize the extent to which fertilizers and pollutants enter the wetlands (typically causing nuisance species to proliferate), and to protect the wetlands as habitat for wildlife.

Because buffers are notoriously difficult to maintain in areas where residences and commercial sites abut them, management of buffers will focus on initial (development period) efforts that will facilitate and encourage ongoing maintenance of them for aesthetics. To this end, buffers that are not initially attractive may be augmented with native plants and will be managed

consistent with goals of maintaining water quality and quality of wetland habitat for wildlife. Species such as (but not limited to) wax myrtle (*Myrica cerifera*), sand cordgrass (*Spartina bakeri*), and Walter's viburnum (*Viburnum obovatum*) may be planted along the foot of the development pad and in the buffer itself. Alternatively, desirable natives may be planted on the rear of the development pad as part of the landscaping. If so planted, the plantings will be part of the overall landscape plan and contribute to meeting the quota of native landscape plants specified in the Pasco County Landscape Ordinance.

Buffers will be actively maintained in areas where they abut roadways and areas visible to mall customers. Maintenance will include removal of species that are generally considered to be unattractive or invasive such as but not limited to dog fennel (*Eupatorium capillifolium*) and exotic nuisance species such as air potato (*Dioscorea bulbifera*).

Buffers will be inspected annually or more frequently by a Qualified Environmental Professional (QEP) to determine needed management, if any. A QEP will provide oversight for maintenance activities conducted in the buffers.

Planting of Surface Water Management Pond Littoral Shelves (Avoidance)

Littoral shelves in the water management ponds on Cypress Creek Town Center will be planted. By planting, undesirable species (such as cattails), will have less opportunity to colonize the littoral shelves and there will thus be less seed source in the area from which cattails can invade the mitigation wetlands. Planting the littoral shelves will also provide a combination of combination of water quality enhancement, aesthetics, and wildlife habitat improvement. Species to be planted will be restricted to native species that will grow well under the anticipated hydrologic regimes. Littoral shelves will be subject to maintenance, monitoring, and contingency planning as provided in the ERP permit. Consistent with the DO, species to be planted will be native and may include, but not limited to, pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria lancifolia*), fireflag (*Thalia geniculata*), and buttonbush (*Cepalanthus occidentalis*). Native species which recruit will be retained except that cattails (*Typha* spp.) will be removed (subject to SWFWMD approval)

Nuisance Species Removal (Adaptive management)

Non-native pest plants, such as Peruvian primrose-willow *(Ludwigia peruviana*), will be removed. Areas required by the Environmental Resource Permit (ERP) to have vegetative cover, will be planted with natives as described above to re-establish the level of vegetative cover required by the ERP. Although certain species are specifically identified in this paragraph, the entire list of plants listed by the Florida Exotic Pest Plant Council (FLEPPC) as Category I or Category II pest plants will be targeted for elimination and control.

Any which are planted for aesthetics or non-permit mandated reasons will be maintained in a manner consistent with the intent for planting.

Low Impact Stormwater Treatment Designs (Avoidance)

As a DRI Development Order (DO) Condition, the Permittee has committed to the implementation of "Low Impact Stormwater Treatment" designs (LID) within the mall footprint. These low-impact treatments are intended to capture runoff from the parking lots and improve water quality prior to any discharge into natural wetlands. They include standard procedures

such as grease baffles and retention in surface water management ponds. They increase treatment through combinations of early capture in parking lot swales, greater treatment volumes and increased residence time in treatment ponds relative to that required by ERP standards, and other measures with demonstrated potential to improve the quality and quantity of water retained on site and within on-site wetlands. Among the LID techniques that are to be limited is the use of native species which will help prevent the spread of nuisance species and help limit the need for nuisance species management in the mitigation wetlands.

c) **Discussion of potential remedial measures in the event mitigation does not meet performance standards in timely manner.**

Successful mitigation takes time. The intent is for mitigation to meet performance standards in a timely manner. Risk is reduced due to location (adjacent to natural lands) and planning for adequate time for site success.

d) **Description of procedures to allow for modifications of performance standards if mitigation projects are meeting mitigation goals, but in unanticipated ways.**

The mitigation procedures, especially those for the Alston Mitigation Site, are designed to improve wetland functions and values. Since seeding with native seeds is the restoration and enhancement method to be employed for most of the Alston Mitigation Site, the success criteria have been written to allow flexibility. The intent is that the species present in the seed mix that are best adapted to the conditions that develop will be the species that succeed.

Should the unexpected occur and a successful mitigation project develop that does not meet the success criteria, a Qualified Environmental Professional (QEP) will meet with the various permitting agencies to modify the conditions of success to meet the unanticipated but desirable results.

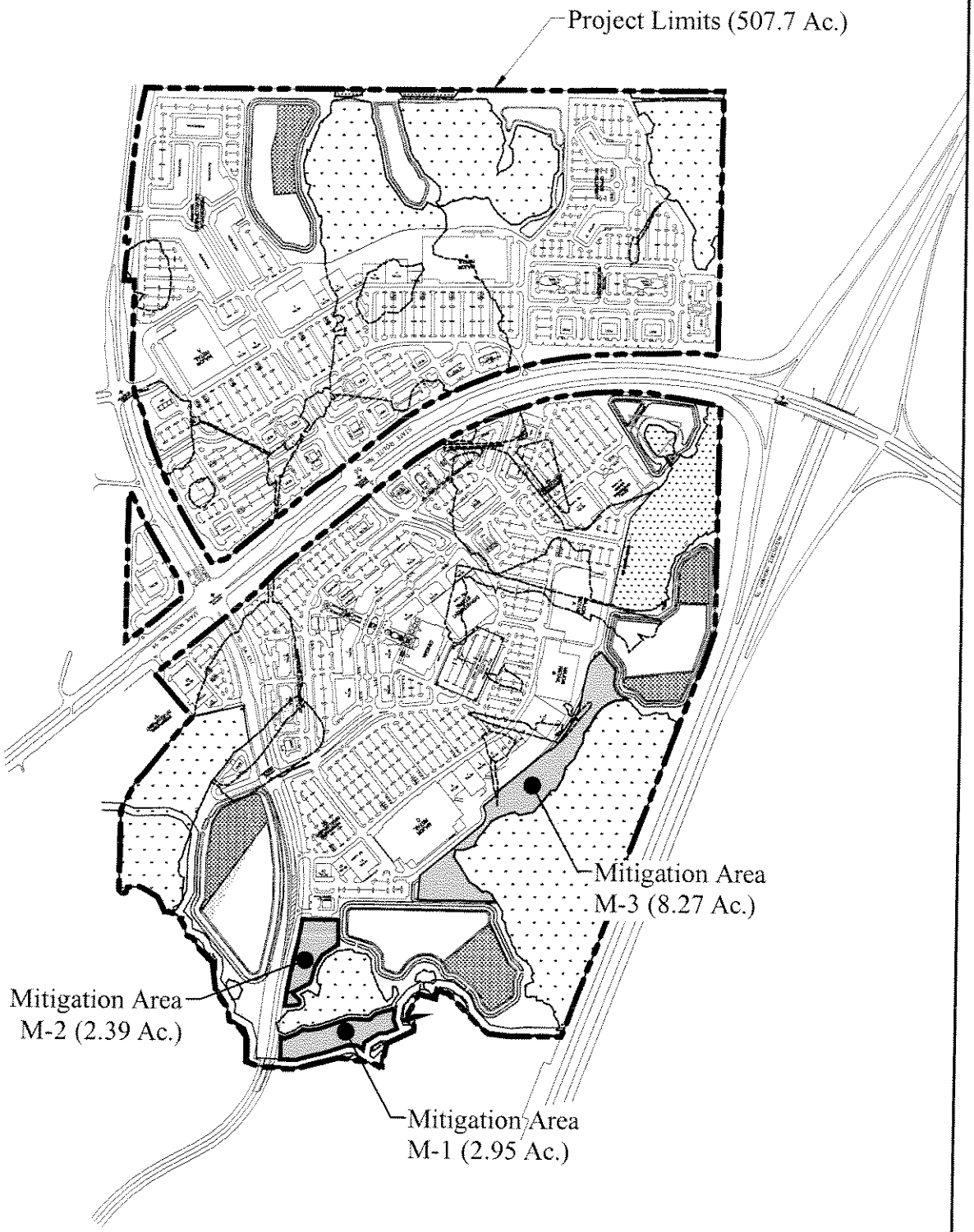
9) Financial Assurances

a) **For each of the following, identify party(ies) responsible to establish and manage the financial assurance, the specific type of financial instrument, the method used to estimate assurance amount, the date of establishment, and the release and forfeiture conditions:**
   1) **Construction phase**
   2) **Maintenance**
   3) **Monitoring**
   4) **Remedial measures**
   5) **Project success**

b) **Types of assurances (e.g., performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, etc.).**

c) **Schedule by which financial assurance will be reviewed and adjusted to reflect current economic factors.**

Appendix J provides draft financial assurance documents. The anticipation is that final versions of these documents will be available within the next 30 days.



CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 57 OF 72

1000 0 500 1000 1 inch = 1000 ft.

Figure 10

Figure 10
Cypress Creek Town Center
Site Plan

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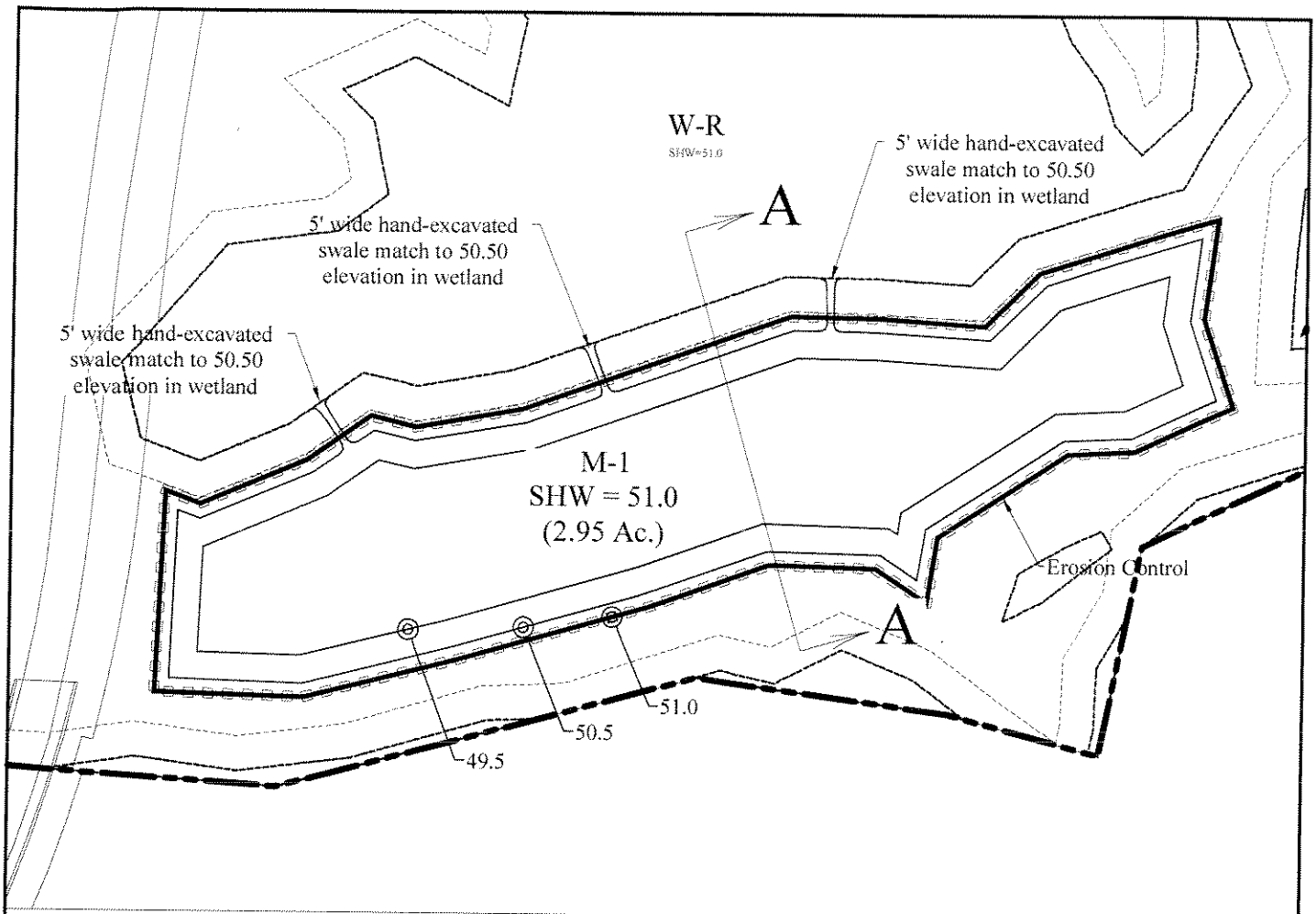

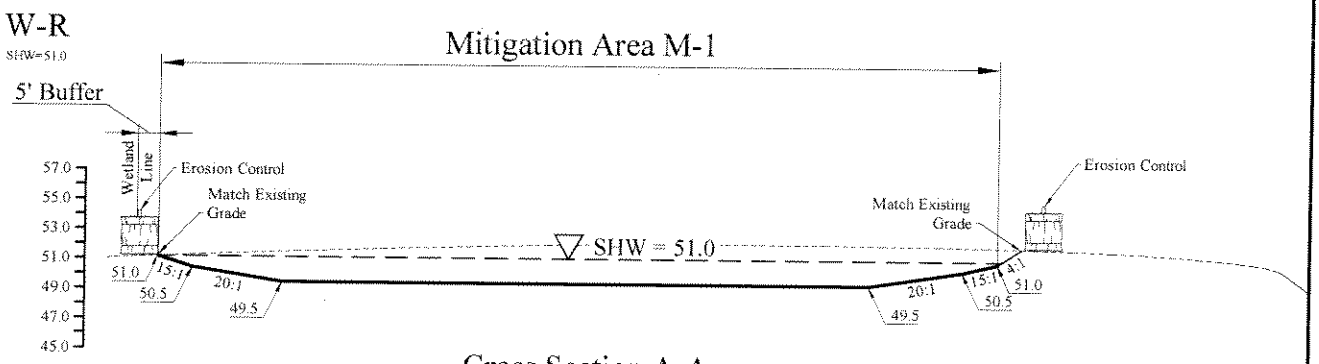

Cross Section A-A
VERT 1" = 12' HORZ 1" = 40'

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 58 OF 72

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120 0 60 120 1 inch = 120 ft.

Figure 23

Figure 23
Cypress Creek Town Center
Mitigation Area M-1 Grading Plan

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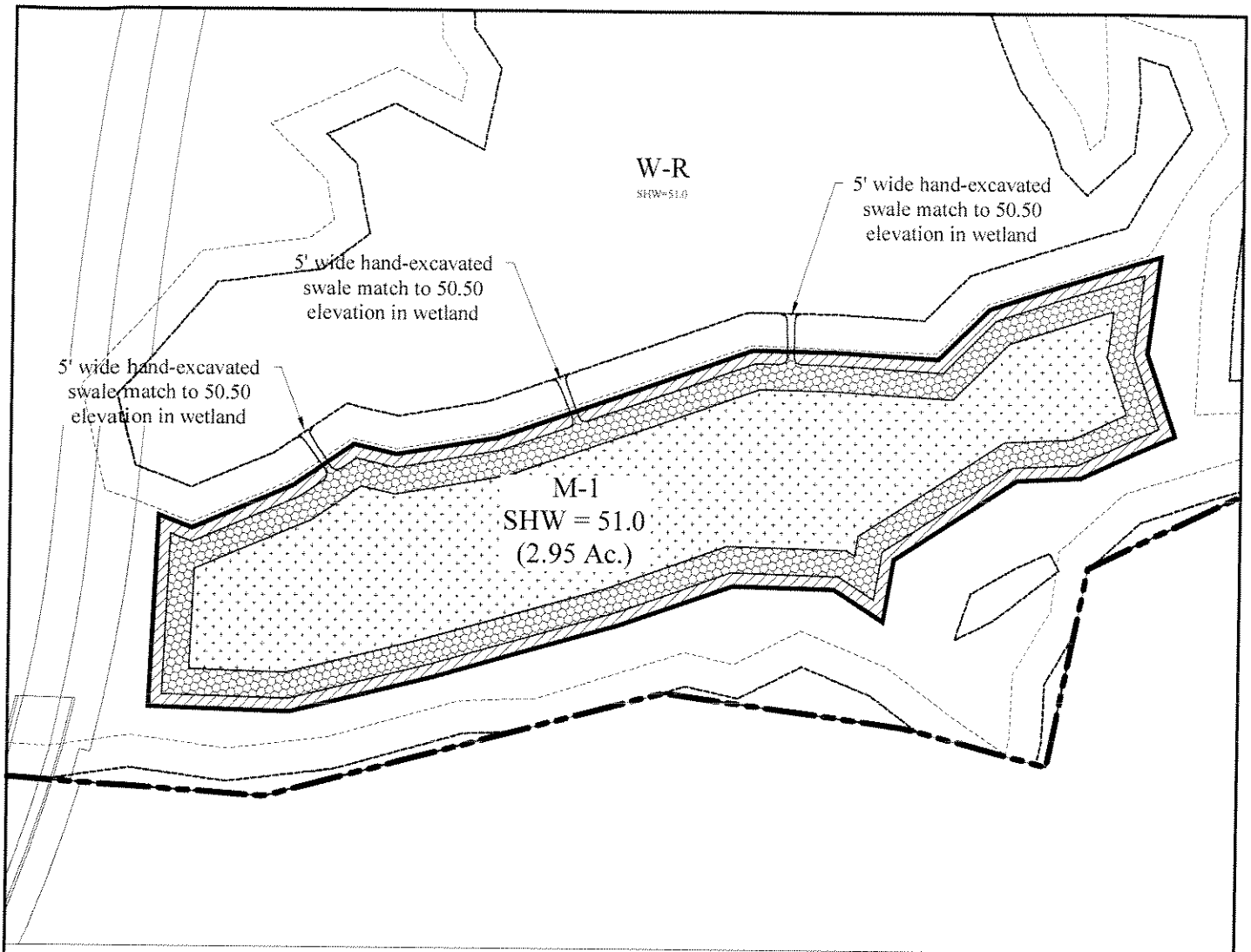

Cypress Creek Town Center On-Site Mitigation Area - M1

Elevation	Scientific Name	Common Name	Area	Quantity	Size	Spacing
49.50	*Pontederia cordata*	pickerelweed	1.68	4,066	1 qt. Equiv	3' o.c.
	Sagittaria lancifolia	lance-leaved arrowhead		4,066	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		732	3 Gal.	10' o.c.
49.5 to 50.50	*Panicum hemitomon*	maidencane	0.83	1,339	1 qt. Equiv	3' o.c.
	Canna Flacida	canna lilly		1,339	1 qt. Equiv	3' o.c.
	Iris Hexagona	prairie iris		1,339	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		362	3 Gal.	10' o.c.
50.5 to 51.00	*Panicum hemitomon*	maidencane	0.44	0	1 qt. Equiv	3' o.c.
	Ludwigia repens	creeping seedbox		1,339	1 qt. Equiv	3' o.c.
	Spartina bakerii			1,339	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		192	3 Gal.	10' o.c.
		Total:	2.95			

120 0 60 120 1 inch = 120 ft.

Figure 23a

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

Figure 23a
Cypress Creek Town Center
Mitigation Area M-1 Planting Plan

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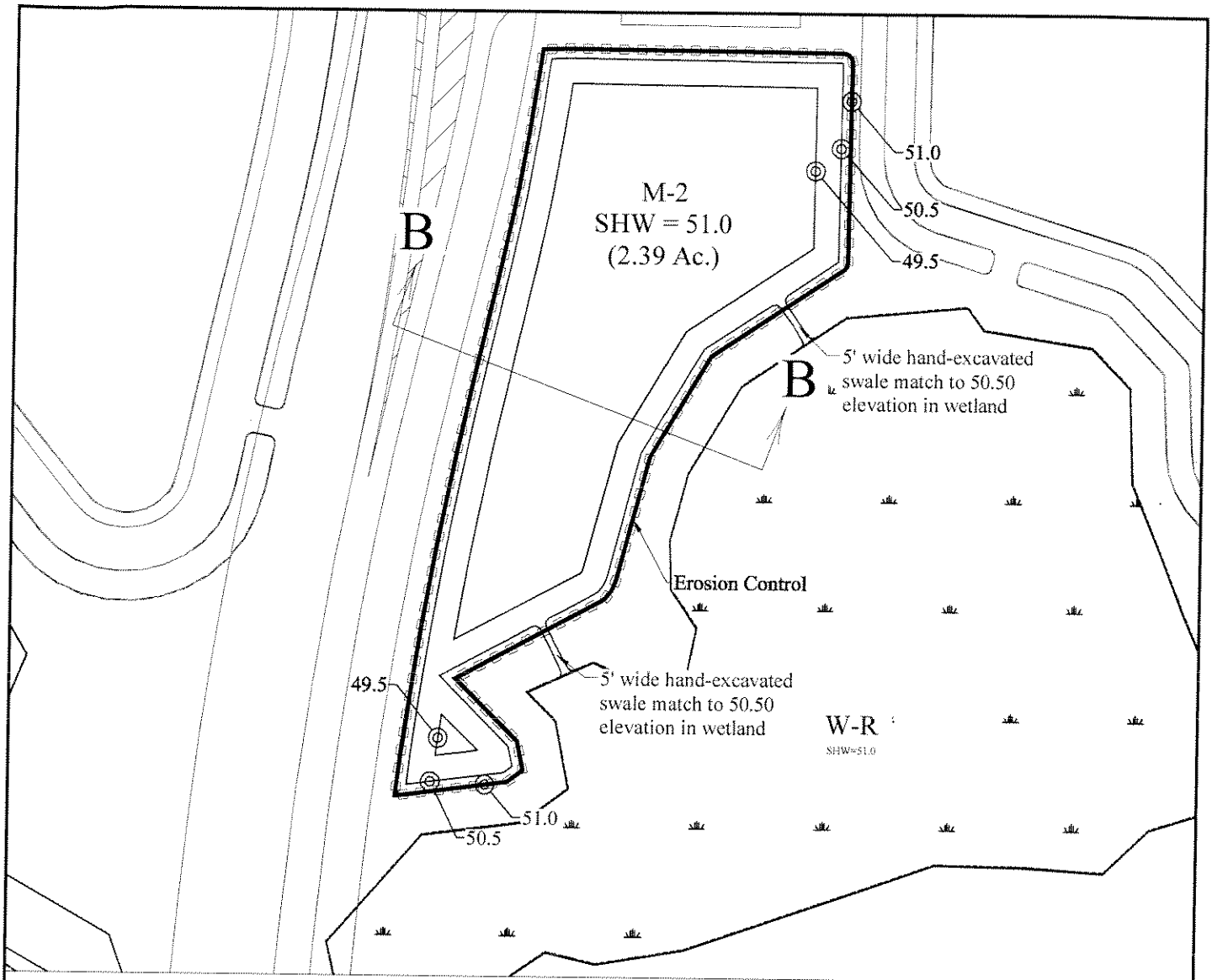

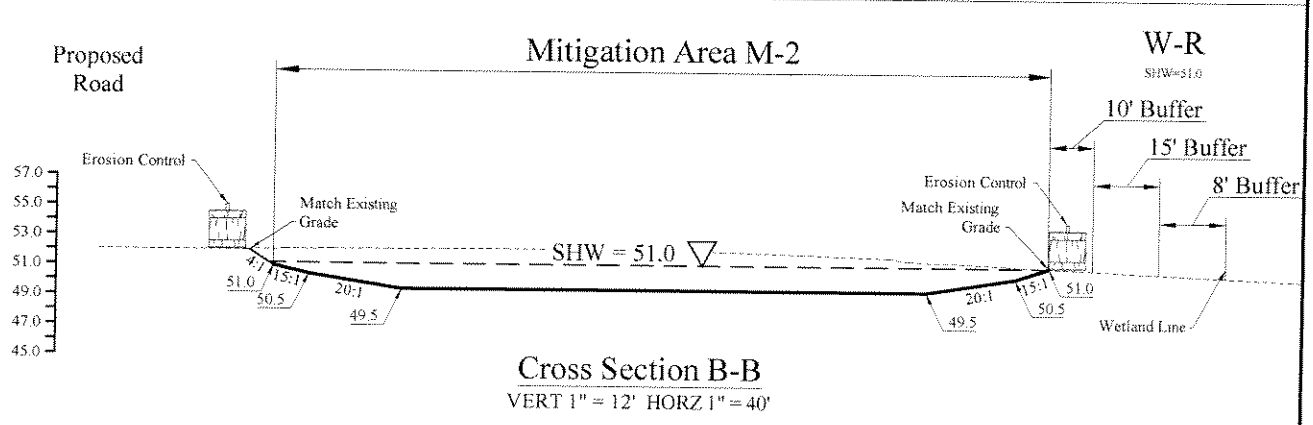

Cross Section B-B
VERT 1" = 12' HORZ 1" = 40'

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 60 OF 72

120 0 60 120 1 inch = 120 ft.

Figure 24

Figure 24
Cypress Creek Town Center
Mitigation Area M-2 Grading Plan

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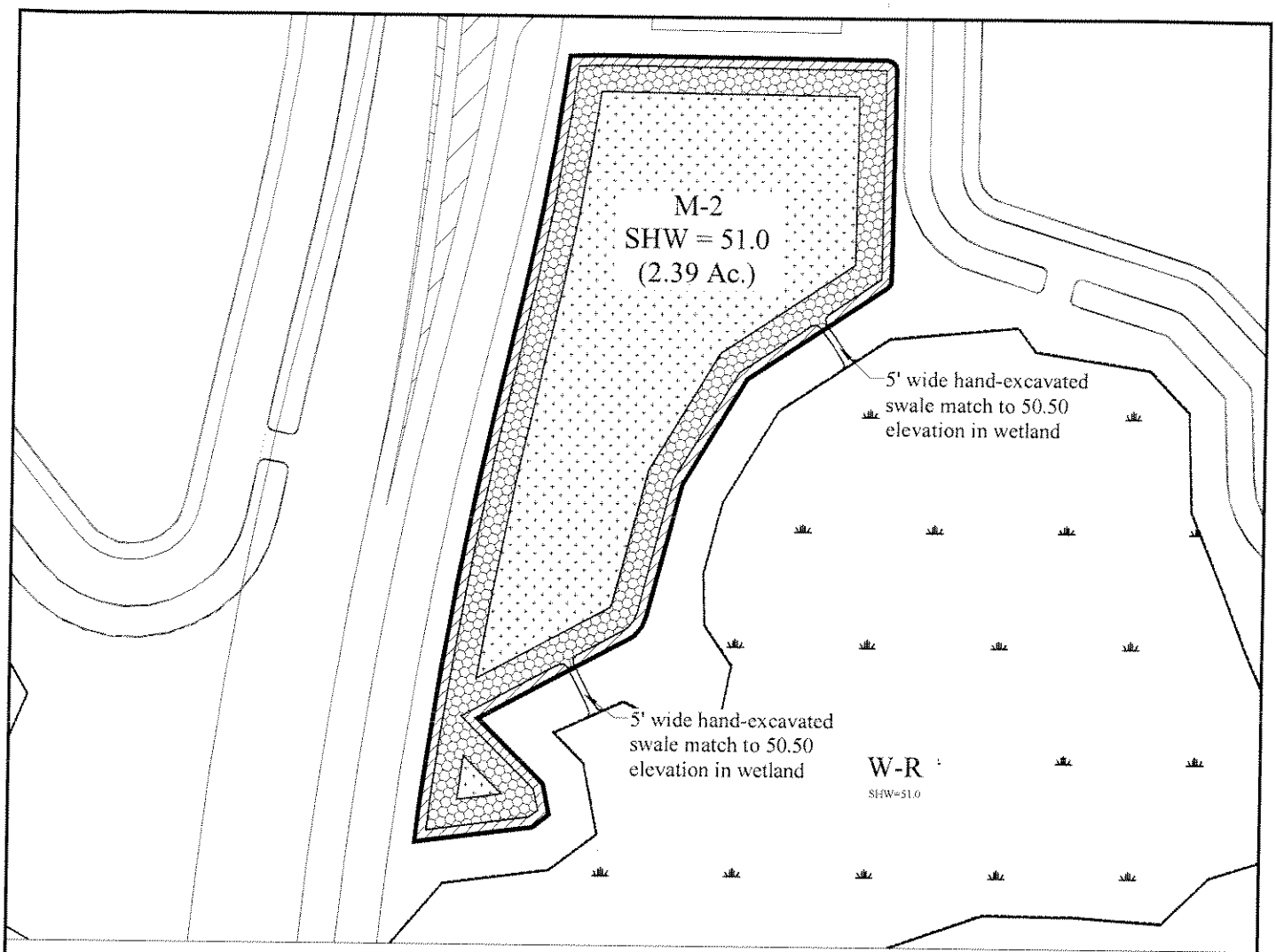

Cypress Creek Town Center On-Site Mitigation Area - M2

Elevation	Scientific Name	Common Name	Area	Quantity	Size	Spacing
49.50	*Pontederia cordata*	pickerelweed	1.40	3,412	1 qt. Equiv	3' o.c.
	Sagittaria lancifolia	lance-leaved arrowhead		3,412	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		614	3 Gal.	10' o.c.
49.5 to 50.50	*Panicum hemitomon*	maidencane	0.70	1,129	1 qt. Equiv	3' o.c.
	Canna Flacida	canna lilly		1,129	1 qt. Equiv	3' o.c.
	Iris Hexagona	prairie iris		1,129	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		305	3 Gal.	10' o.c.
50.5 to 51.00	*Panicum hemitomon*	maidencane	0.29	0	1 qt. Equiv	3' o.c.
	Ludwigia repens	creeping seedbox		1,129	1 qt. Equiv	3' o.c.
	Spartina bakerii			1,129	1 qt. Equiv	3' o.c.
	Taxodium Ascendens	Pond Cypress		129	3 Gal.	10' o.c.
		Total:	2.39			

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 61 OF 72

120 0 60 120 1 inch = 120 ft.

Figure 24a

Figure 24a
Cypress Creek Town Center
Mitigation Area M-2 Planting Plan

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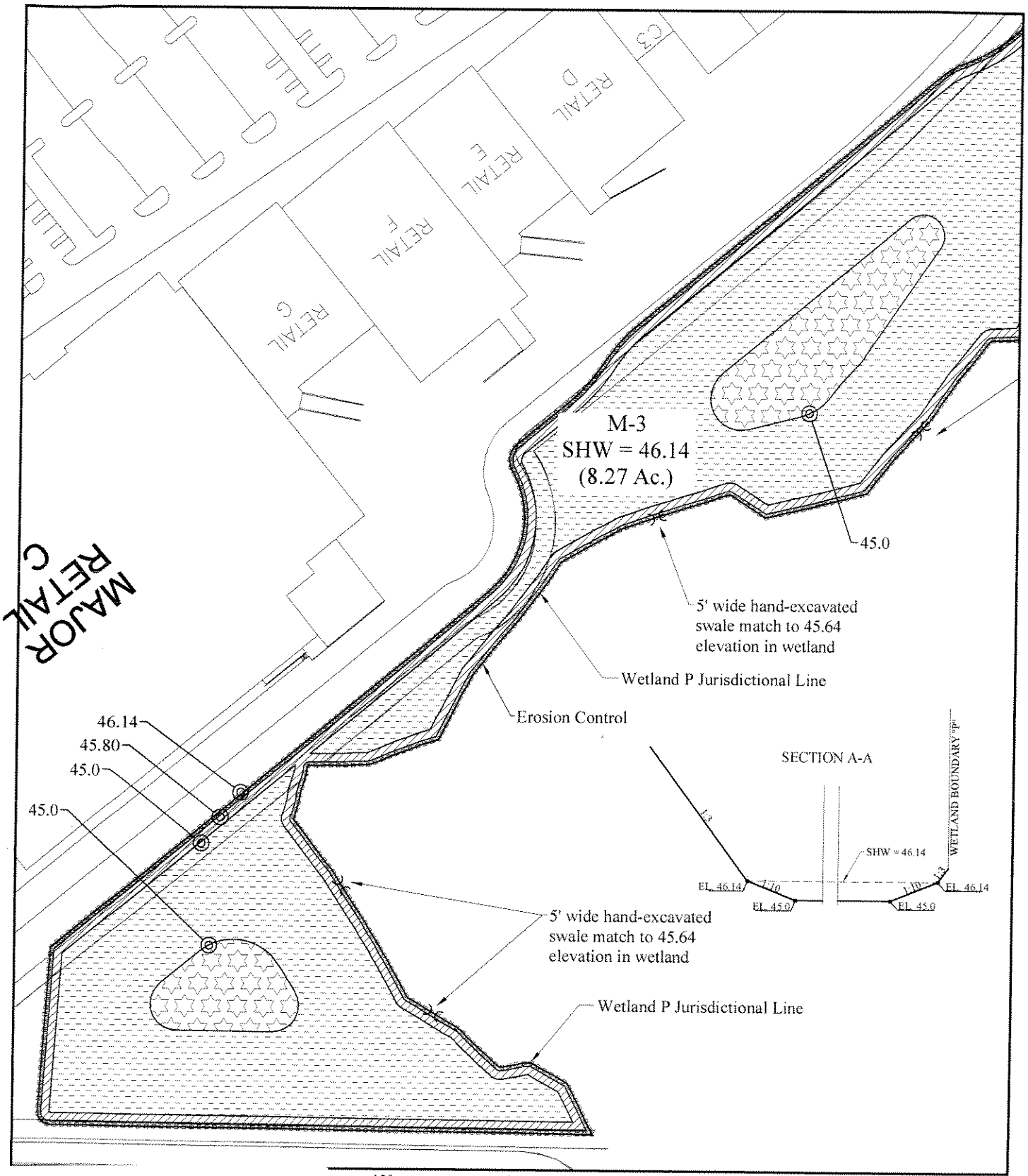

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

Figure 24b

ATTACHMENT 3
SHEET 62 OF 72

Figure 24b
Cypress Creek Town Center
Mitigation Area M-3 Planting Plan

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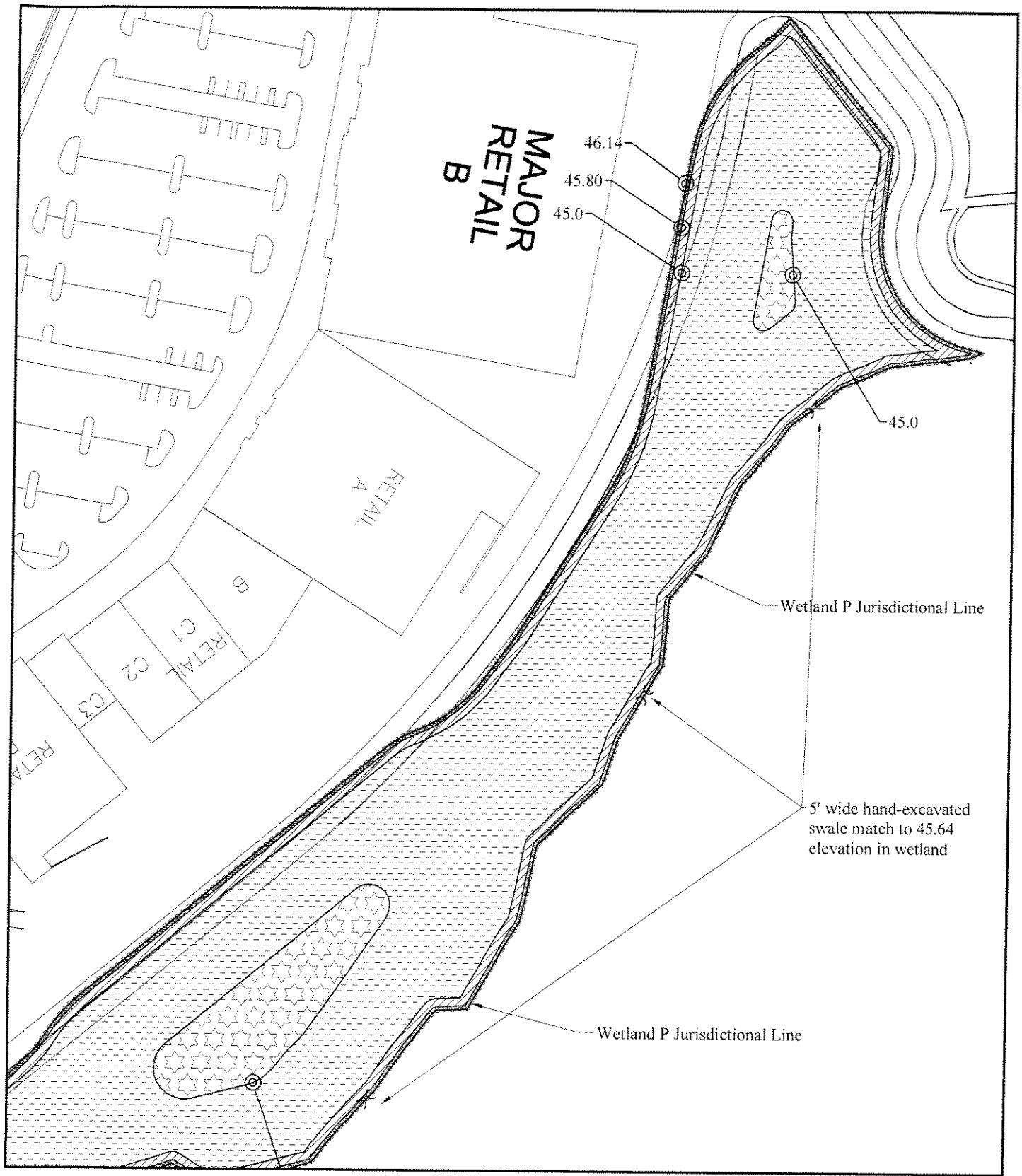

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 63 OF 72

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120 0 60 120 1 inch = 120 ft.

Figure 24c

Figure 24c
Cypress Creek Town Center
Mitigation Area M-3 Planting Plan

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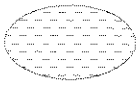
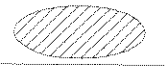
Cypress Creek Town Center On-Site Mitigation Area - M-3

	Elevation	Scientific Name	Common Name	Area	Quantity	Size	Spacing
	45.00	*Pontederia cordata*	pickerelweed	6.21	15028	1 qt. Equiv	3' o.c.
		Sagittaria lancifolia	lance-leaved arrowhead		15028	1 qt. Equiv	3' o.c.
	45.00	*Pontederia cordata*	pickerelweed	0.69	1670	1 qt. Equiv	3' o.c.
		Sagittaria lancifolia	lance-leaved arrowhead		1670	1 qt. Equiv	3' o.c.
		Cephalanthus occidentalis	buttonbush		1202	1 Gal.	5' o.c.
	45.00 to 45.80	*Panicum hemitomon*	maidencane	0.96	4646	1 qt. Equiv	3' o.c.
	45.8 to 46.14	*Spartina bakerii*	sand cordgrass	0.24	1162	1 qt. Equiv	3' o.c.
	45.80 to 46.14	*Spartina bakerii*	sand cordgrass	0.17	823	1 qt. Equiv	3' o.c.
		*Taxodium Ascendens**	Pond Cypress		74	3 Gal.	10' o.c.
			Total:	8.27			

* This is a herbaceous wetland creation area, these trees are being planting on the edge of the area for aesthetics, to discourage mowing, and to act as perches to encourage wood stork use of the area. The survival of these trees is not necessary for this area to be considered successful.

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 64 OF 72

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Figure 22b

Figure 22b
Cypress Creek Town Center
Mitigation Area M-3 Planting Plan

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SUITE 180
TAMPA, FLORIDA 33619
(813) 664-4500 FAX (813) 664-0440
www.biologicalresearch.com

PLANTING OF SURFACE WATER POND LITTORAL SHELVES AND OPEN WATER AREAS WITHIN 300 FEET OF CYPRESS CREEK

The Permittee is committed to planting the littoral shelves of surface water management ponds so that they will provide habitat suitable as foraging areas for wading birds (specifically the wood stork). These littoral shelves occupy 35 percent of the total area of the ponds, hence providing approximately 13.20 acres of wetland habitat. These commitments have been made to Pasco County (see Excerpt 1) and to the SWFWMD (see Excerpt 2). The developer is providing a littoral shelf maintenance plan to the SWFWMD that is consistent with the County's desire that the littoral shelves be maintained in native wetland plants.

In addition, the SWFWMD management plan for littoral shelves includes planting the outer edges of these shelves with species adapted to deeper water (Excerpt 2). The ponds within 300 feet of Cypress Creek are shallow (approximately 3 feet deep), and it would be appropriate to plant the deeper water species throughout the non-littoral shelf area (2.81 acres) of the pond areas that is within 300 feet of the creek. By planting these areas, the effective width of the corridor along Cypress Creek would be expanded to be at least 300 feet wide. The applicant will plant spatterdock and/or water lily with water lily which are marsh species that are used by a variety of wildlife as shelter (amphibians, fish), perching/resting platforms (wading birds), or sources of nest building materials (selected birds, small mammals). By providing habitat for prey species, these ponds will also improve habitat for small mammals (raccoons) and wading birds which will forage from pond edges.

Excerpt 1 -- On-Site Wetland Protection Plan -- as approved by Pasco County

3.2 Planting of Surface Water Management Pond Littoral Shelves

Some littoral shelves on Cypress Creek Town Center will be planted to achieve a combination of water quality enhancement, aesthetics, and wildlife habitat creation. Species to be planted will be restricted to native species that will grow well under the anticipated hydrologic regimes. Littoral shelves will be subject to maintenance, monitoring, and contingency planning as provided in the ERP permit. Consistent with the DO, species to be planted will be native and may include, but not limited to, pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria lancifolia*), fireflag (*Thalia geniculata*), and buttonbush (*Cephalanthus occidentalis*). Native species which recruit will be retained except that cattails (*Typha* spp.) will be removed from any littoral shelf that is visible from roadways or parking areas used by commercial users and residents; cattails will be retained as a native species useful to water quality treatment in areas visible only to maintenance uses unless they are adjacent to on-site creation areas or ponds with littoral shelves, in which case, they will be removed to prevent spread by seed.

Non-native pest plants, such as Peruvian primrose-willow *(Ludwigia peruviana)*, will be removed. Areas required by the ERP to have vegetative cover, will be planted with natives as described above to re-establish the level of vegetative cover required by the ERP.

Any species that are planted for aesthetics or non-permit mandated reasons will be maintained in a manner consistent with the intent for planting.

Excerpt 2 -- as prepared for the SWFWMD – to be submitted as a permit modification to be consistent with the above Pasco County plan

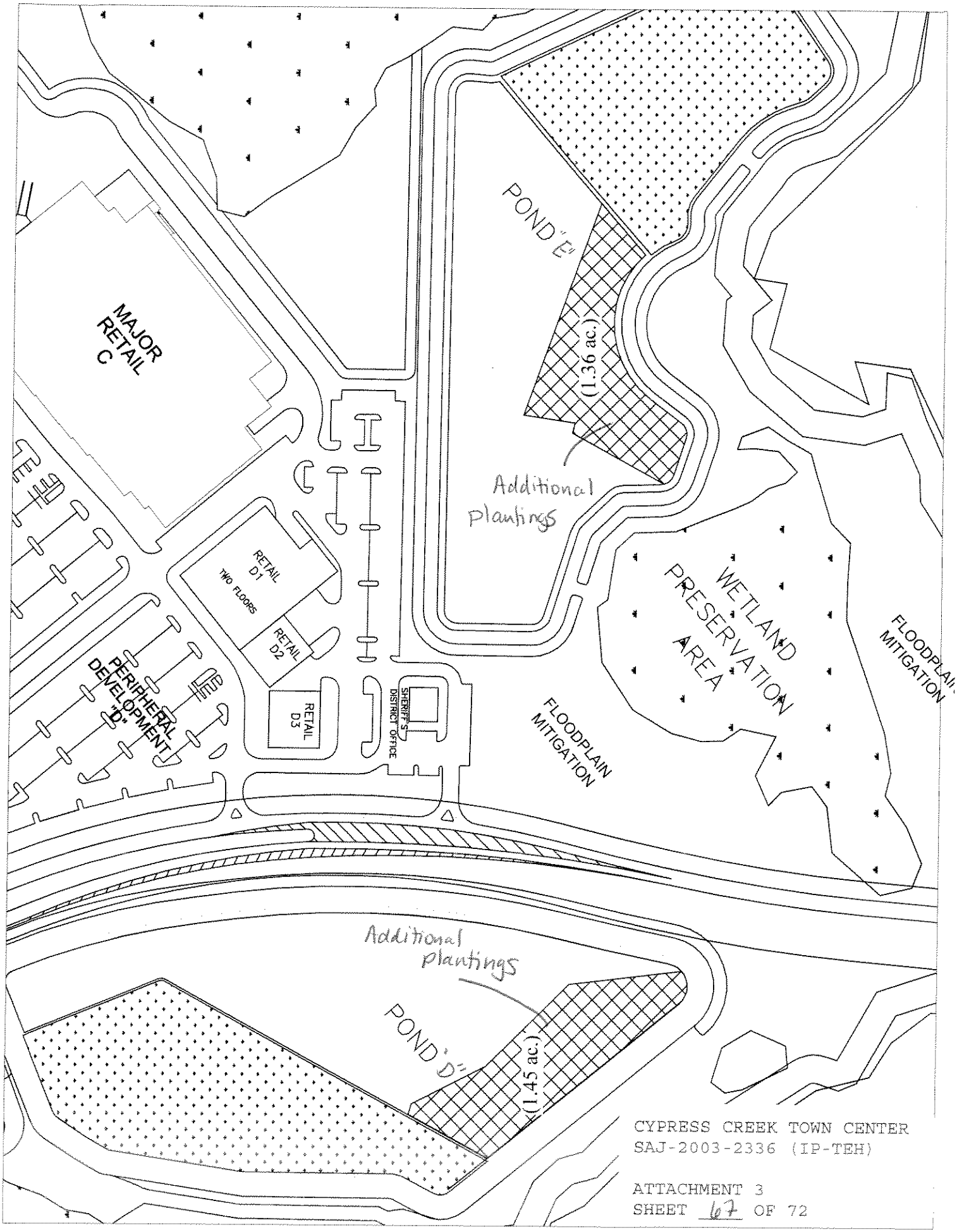
2.1 Planting of Surface Water Management Pond Littoral Shelves

Maintenance of littoral shelves and shallower parts of surface water management ponds can be greatly facilitated by planting of desirable species. The appropriate species are those that are fast growing and that form dense stands such that they sequester dissolved nutrients and other ions within their biomass. The appropriate species are also those that form dense stands and which therefore discourage the growth of invasive non-native species.

The littoral shelves of wet detention ponds will be planted with native species. Consistent with the Development of Regional Impact (DRI) development order, species to be planted will be native and may include, but are not limited to, pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria lancifolia, S. latifolia*), spikerush (*Eleocharus cellulosa, E. equisetoides*), fireflag (*Thalia geniculata*), bulrush (*Scirpus californicus*), and buttonbush (*Cephalanthus occidentalis*). Herbaceous species will dominate. Herbaceous species will be planted on 3-foot centers (4840/acre). In addition to the above, species that can survive deeper water such as, but not limited to, spatterdock (*Nuphar lutea*) and water lily (*Nymphaea odorata, N. mexicana*) may be planted on the deeper edges of littoral shelves such that they can spread across the water surface and provide additional treatment.

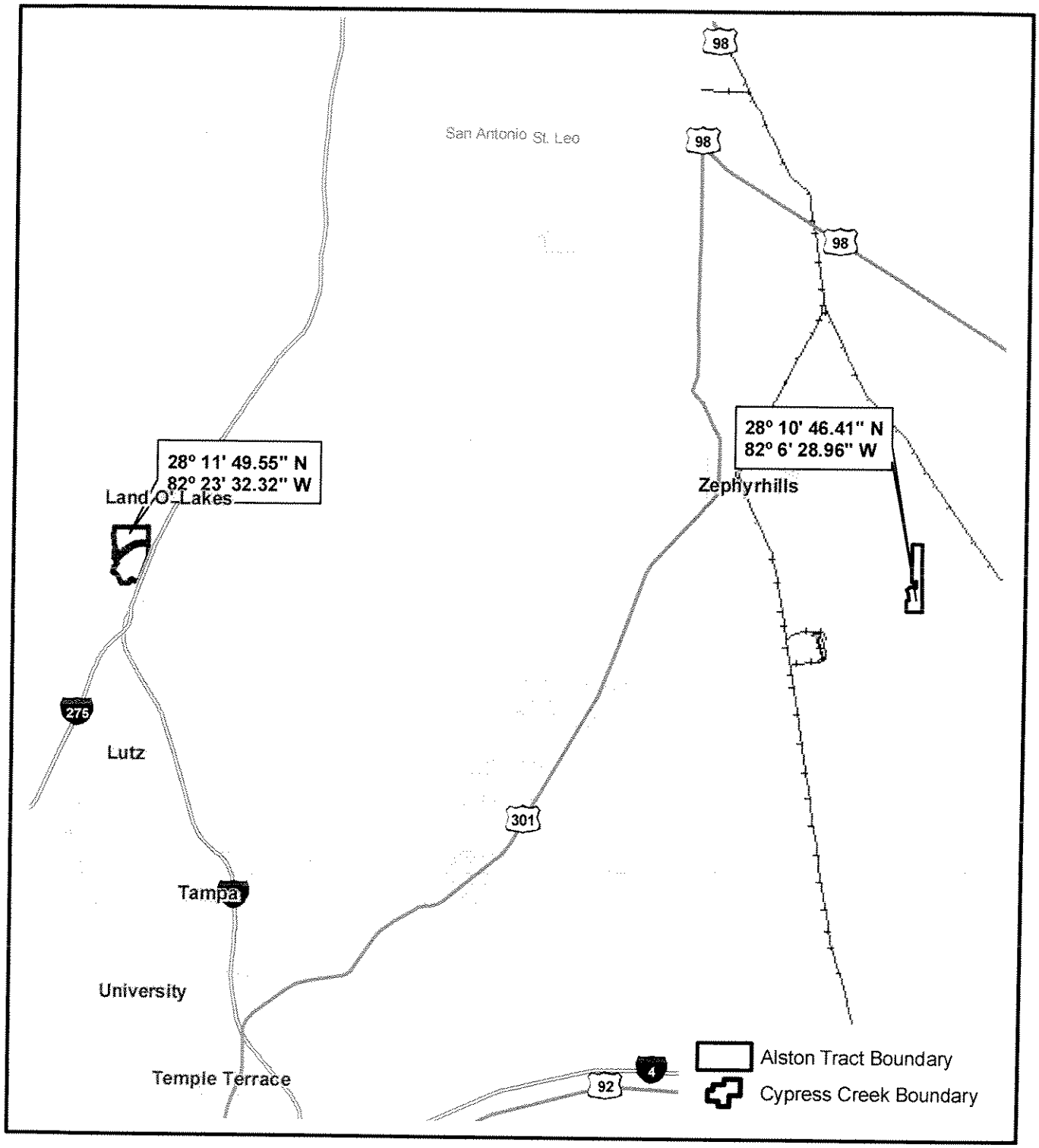
Note: the Permittee will commit to planting spatterdock and water lily on 6-ft centers in the area of surface water management pond within 300 ft of Cypress Creek.

Pond ID	Littoral Shelf Area	Additional Area of Planting within 300 feet of Cypress Creek
A	2.58	
C	3.18	
D	3.81	1.45
E	3.63	1.36
TOTAL:	13.20	2.81



CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 67 OF 72



CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 68 OF 72

Figure 23
Alston Mitigation Site
Pasco County, Florida
Location Map

Biological Research Associates
3910 US Highway 301N
Suite 180
Tampa, Florida 33619
813-664-4500 FAX 813-664-4440
www.biologicalresearch.com

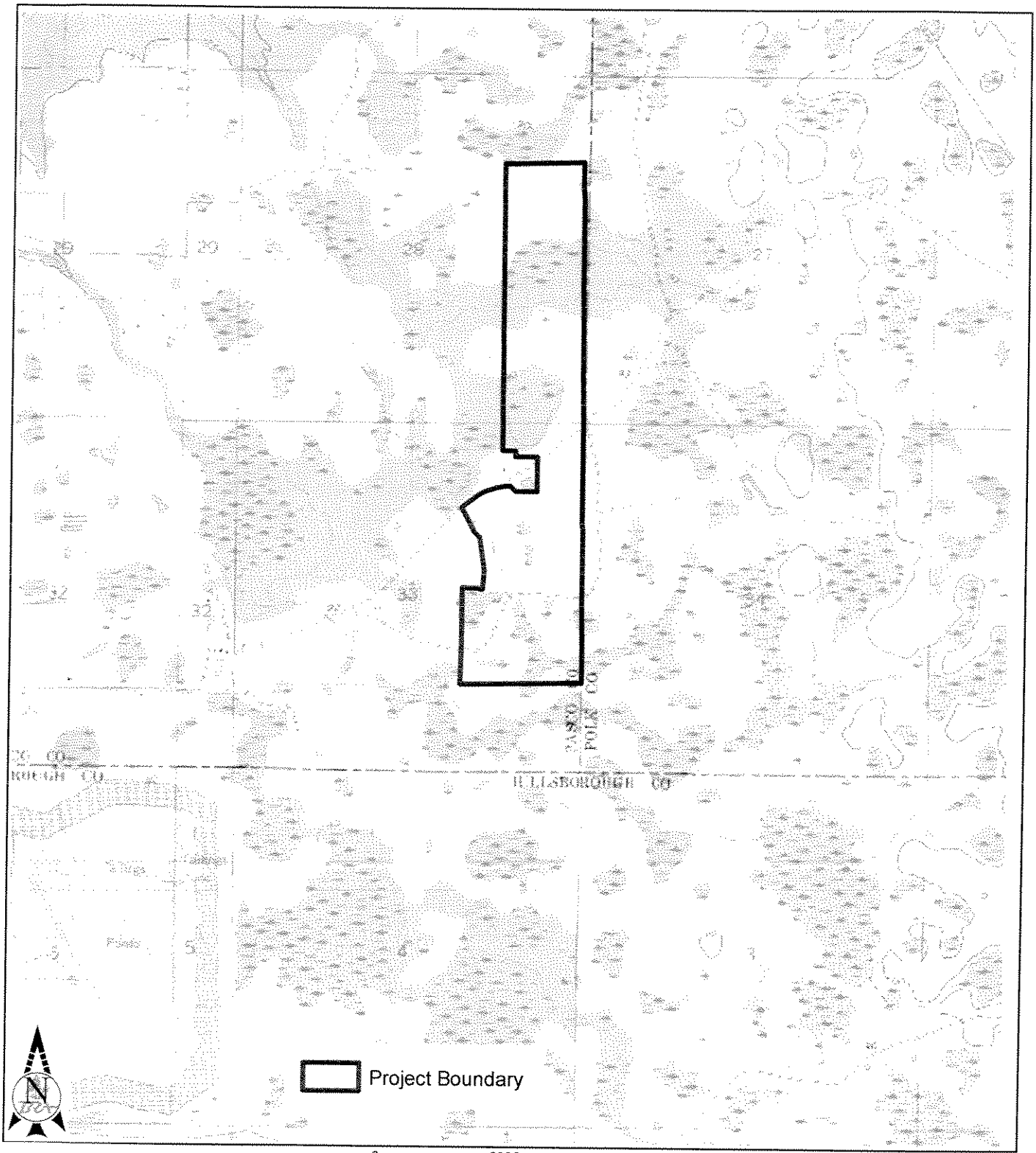


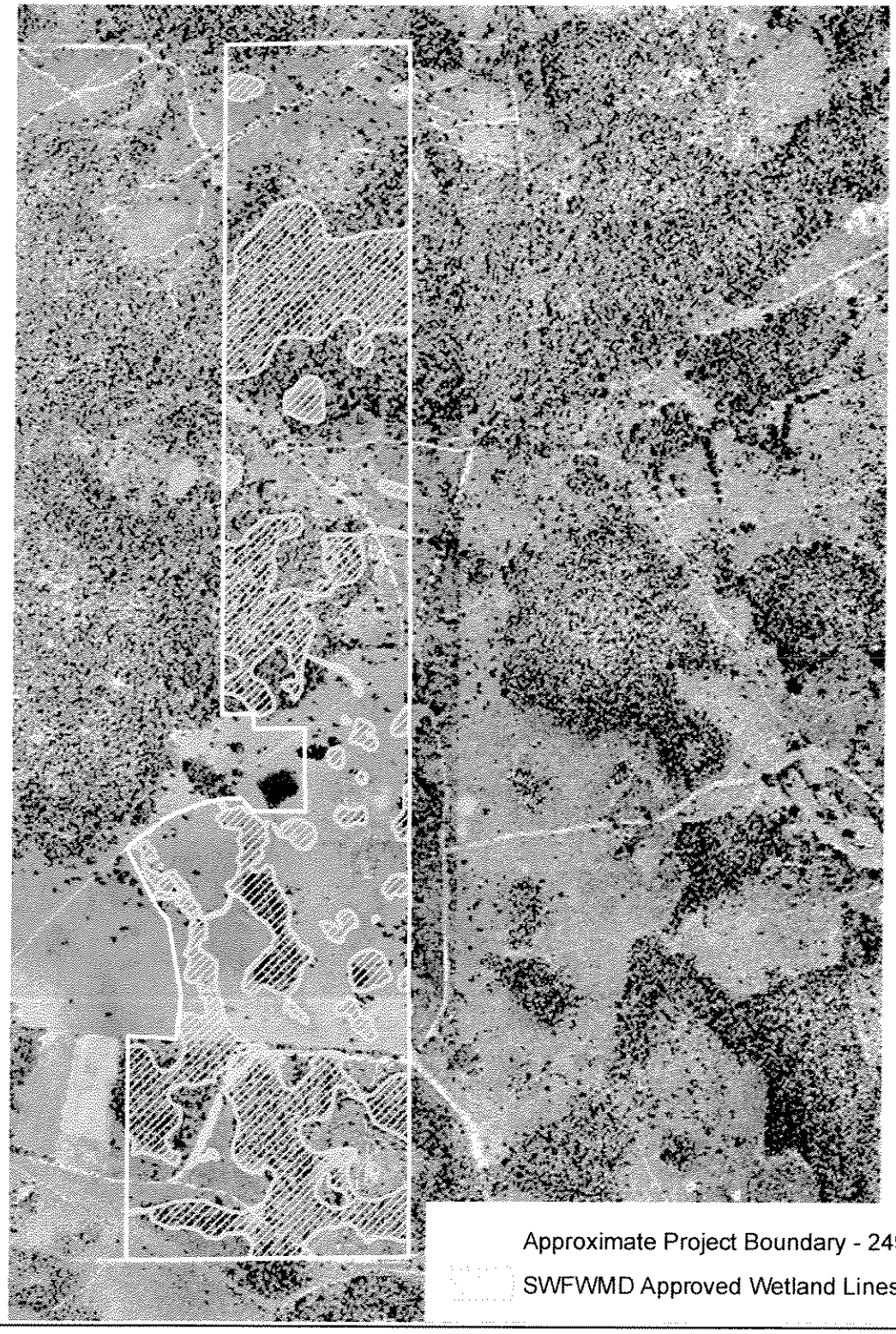
image: USGS QUAD; Socrum, FL 1990

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 69 OF 72

Figure 27
Alston Mitigation Site
Pasco County, Florida
USGS QUAD Map

Biological Research Associates
3010 US Highway 301N
Suite 180
Tampa Florida 33619
813-664-4500 FAX 813-664-4440
www.biologicalresearch.com



Approximate Project Boundary - 249.1 ac.

SWFWMD Approved Wetland Lines - 85.1 ac.

1000 2000 3000 Feet

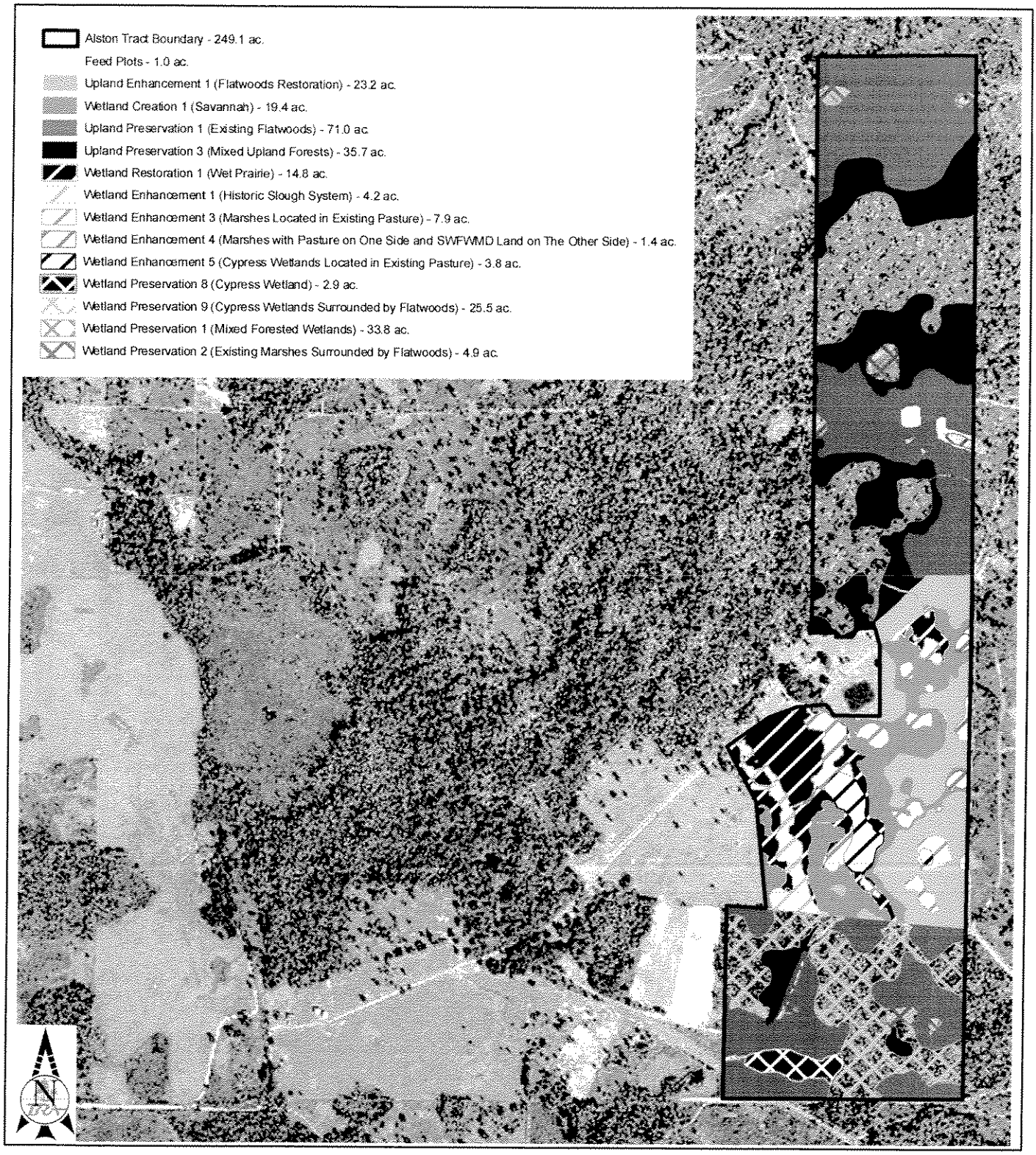
Image: 2005 Aerials Express Inc
1 inch equals 1010 feet

CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 70 OF 72

Figure 25
Alston Property
Pasco County, Florida
Wetland Map

Biological Research Associates
3916 US Highway 301N
Suite 180
Tampa, Florida 33619
813-664-4500 FAX 813-664-4040
www.biologicalresearch.com



CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 71 OF 72

Figure 29
Alston Mitigation Site
Hillsborough County, Florida
Wetland Mitigation Plan

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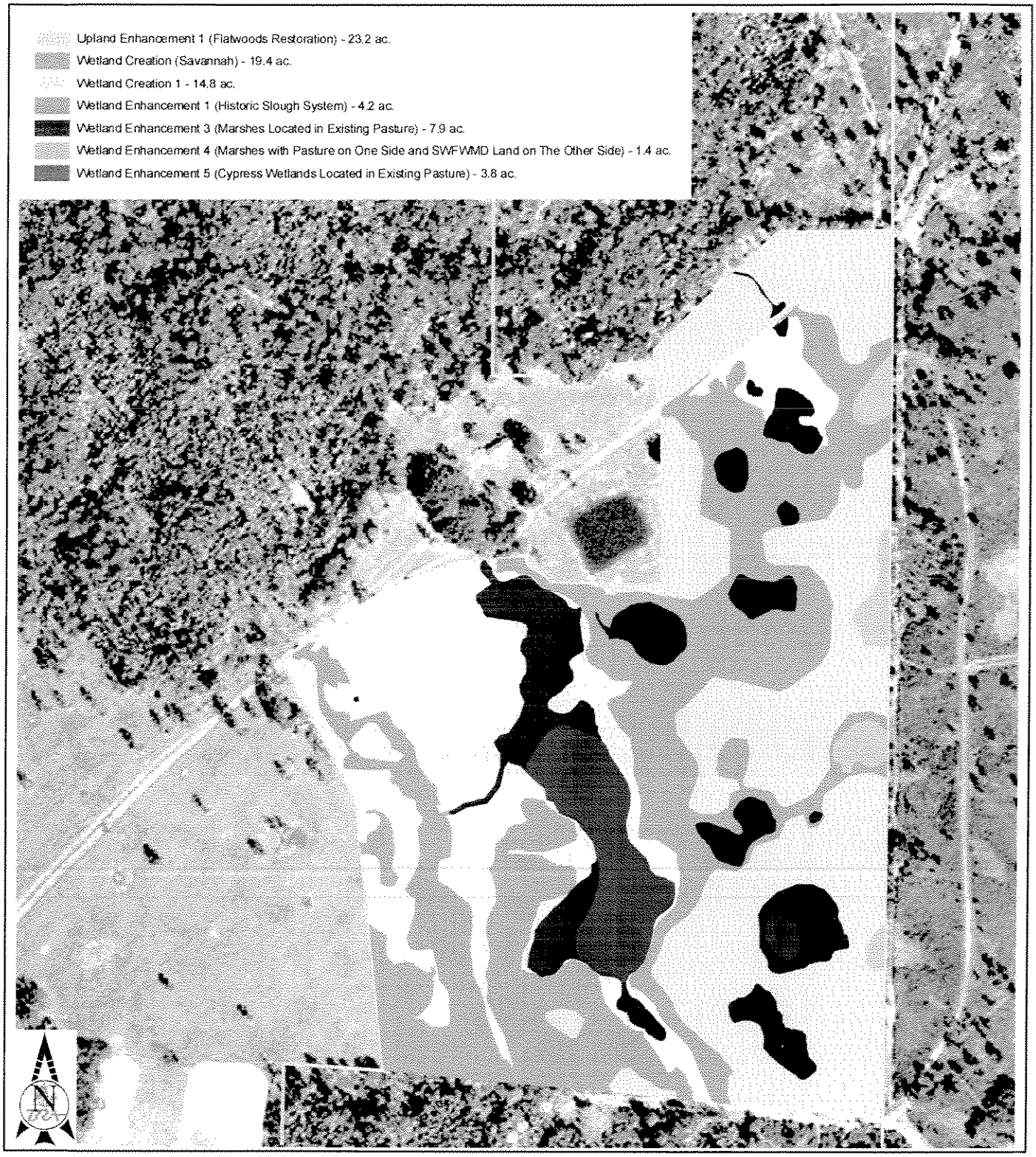
3916 US Highway 301N
Suite 180
Tampa, Florida 33619
813-664-4500 FAX 813-664-0440
www.biologicalresearch.com



CYPRESS CREEK TOWN CENTER
SAJ-2003-2336 (IP-TEH)

ATTACHMENT 3
SHEET 72 OF 72

Figure 30
Alston Mitigation Site
Hillsborough County, Florida
nd Restoration, Creation & Enhancement Areas
Proposed in Existing Pastures

Biological Research Associates
3916 US Highway 301N
Suite 180
Tampa, Florida 33619
813-664-4500 FAX 813-664-0440
www.biologicalresearch.com